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EXAMINER

WOZNIAK, JAMES S

ART UNIT

PAPER NUMBER

2655

6

DATE MAILED: 06/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/933,881

Applicant(s)

SUEYOSHI ET AL.

Examiner

James S. Wozniak

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 8/21/2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### Detailed Action

#### *Drawings*

1. Figures 7 and 8 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application.

The objection to the drawings will not be held in abeyance.

#### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicants' admission of prior art in view of Nishiwaki et al (*U.S. Patent: 5,953,375*).

With respect to **Claims 1, 5, 6, and 10**, the prior art disclosed in the applicants' specification states:

A signal transmission apparatus and method for transmitting a plurality of pieces of encoded audio information encoded by the same encoding method via a digital interface to a

signal reception apparatus, wherein each of the plurality of pieces of encoded audio information has a sampling frequency of  $F$ ,  $\frac{1}{2} \times F$ , or  $\frac{1}{N} \times F$ , the apparatus comprising:

A data generating section for, based on one-frame data obtained by dividing the encoded audio information into frames, generating at least one block (*applicant's admitted prior art, Page 5, Lines 7-10*); and

A data output section for outputting the at least one block generated by the data generating section to the digital interface (*applicant's admitted prior art, Page 6, Lines 29-33*), wherein:

Each of the at least one block includes a body portion, and a header portion storing management information for managing data stored in the body portion (*applicant's admitted prior art, Fig. 8*);

The management information includes synchronization word information indicating a start of the block, and information indicating whether data stored in the body portion is valid (*applicant's admitted prior art, Page 7, Lines 5-16*);

When the encoded audio information has a sampling frequency of  $F$ , the data generating section generates one block for one-frame data of the encoded audio information, stores one-frame data of the encoded audio information in the body portion of the generated block, and stores in the header portion of the generated block the management information including information indicating that data stored in the body portion of the generated block is valid (*applicant's admitted prior art, Fig. 8, in the case of an  $F$  sampling frequency, which would not require any dummy data*);

The disclosure of the prior art does not teach the inclusion of stuffing data into a frame of audio data at in an instance of a half-rate sampling frequency, however Nishiwaki recites:

When the encoded audio information has a sampling frequency of  $1/N \times F$  (where  $N$  is greater than or equal to 2), the data generating section generates a pair of blocks including a previous block and a subsequent block for one-frame data of the encoded audio information, stores one-frame data of the encoded audio information in the body portion of the generated previous block, stores in the header portion of the generated previous block the management information (*management information cited by applicant*) including information indicating that data stored in the body portion of the generated previous block is valid, and stores in the header portion of the generated subsequent block the management information including information indicating that data stored in the body portion of the generated subsequent block is invalid (*padding packet length determined by sampling frequency, Col. 14, Lines 31-49, and Fig. 3*); and

The sizes of the previous block and the subsequent block generated by the data generating section when the encoded audio information has a sampling frequency of  $\frac{1}{2} \times F$  are each equal to the size of the one block generated by the data generating section when the encoded audio information has a sampling frequency of  $F$  (*padding packet length determined by sampling frequency, Col. 14, Lines 31-49, and Fig. 3. Since the amount of stuffing information is determined by the sampling frequency, it would be obvious that the frame size of an original sampling frequency would be retained, with the difference between audio data amounts being compensated by a stuffing data amount.*).

The applicants' cited prior art and Nishiwaki are analogous art because they are from a similar field of endeavor in audio signal processing. Thus, it would have been obvious to a

person of ordinary skill in the art, at the time of invention, to combine the means of generating stuffing information in an audio frame based upon sampling frequency as taught by Nishiwaki with the audio encoding system and method disclosed in the background of the invention to enable an audio receiving device to produce an audio output from an encoded audio signal in the case that the read-out sampling frequency of the device differs from that of the encoded data, thus avoiding re-encoding and re-transmission of the audio signal and improving processing efficiency. Also, since the amount of stuffing data is determined by the sampling frequency, as taught by Nishiwaki, it would have been obvious to one of ordinary skill in the art, at the time of invention, that any reduced sampling rate,  $1/N \times F$  (where  $N$  is greater than or equal to 2), would be valid for determining a stuffing data amount, with more stuffing data required for descending sampling frequencies. Therefore, it would have been obvious to combine Nishiwaki with the disclosed prior art for the benefit of obtaining a multi-rate compatible encoded audio reproduction device and method, to obtain the invention as specified in Claims 1, 5, 6, and 10.

With respect to **Claims 2 and 7**, the applicants' admission of prior art recites:

A signal transmission apparatus and method, wherein the information indicating whether data stored in the body portion is valid is side information indicating whether the encoded audio information is stored in the body portion (*applicant's admitted prior art, Page 6, Lines 11-15*).

Also, it would have been obvious to one of ordinary skill in the art, at the time of invention, that when the side information indicates that the encoded audio information is not stored in the body portion, the side information indicates that the data stored in the body portion is invalid since, if the information in the body portion is not audio, any other type of data stored

in the body portion would not be readable (stuffing information) by an audio output device and thus, be invalid.

With respect to **Claims 3 and 8**, the applicants' admission of prior art recites the audio encoding system and method disclosed as applied to Claims 1 and 6. The disclosed prior art does not teach the storing of stuffing information in the body portion of a subsequent block, however Nishiwaki discloses:

Signal transmission apparatus and method, wherein the data generating section stores stuffing information in the body portion in the subsequent block (*stuffing information stored in a padding packet subsequent to a main sample packet, Fig. 3*).

The applicants' cited prior art and Nishiwaki are analogous art because they are from a similar field of endeavor in audio signal processing. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to combine the use of stuffing information stored in a padding packet subsequent to a main sample packet as taught by Nishiwaki with the audio encoding system and method disclosed in the background of the invention in order to separate and clearly define a portion of a encoded audio data that does not contain an encoded audio signal (stuffing information) so as to prevent an undesirable output resulting from reading out invalid data. Therefore, it would have been obvious to combine Nishiwaki with the disclosed prior art for the benefit of obtaining a multi-rate compatible encoded audio reproduction device and method, capable of clearly defining an invalid data portion in a separate packet so as to prevent an undesirable audio output resulting from reading out invalid data, to obtain the invention as specified in Claims 3 and 8.

With respect to **Claims 4 and 9**, the applicants' admission of prior art recites:

The signal transmission apparatus and method, wherein:

The management information further includes data type information indicating an encoding method for data stored in the body portion (*applicant's admitted prior art, Page 9, Lines 21-23*);

Also, it would have been obvious to one of ordinary skill in the art, at the time of invention, that a data type would be set to a specific sampling frequency (corresponding to the sampling frequency of a receiving device) regardless of the type of encoded speech data, at a full or scaled sampling frequency, included either in a previous or subsequent block so that a playback device, which operates at a single read-out sampling frequency, can process the encoded audio data since the frame will still contain the number of samples required by the playback device and the stuffing information will be discarded due to the indication of invalid audio data in the management information header with only the valid audio data being considered.

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Nagai et al (*U.S. Patent: 5,247,396*)- teaches a PCM signal playback method that utilizes dummy data in an audio signal so that audio with a certain sampling frequency can be played on a device with a different read-out sampling frequency.



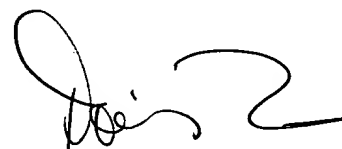
- Jayant (U.S. Patent: 5,826,227)- teaches a fixed-rate audio coder that implements bit stuffing in order to maintain a predetermined frame size.
- Smyth et al (U.S. Patent: 5,956,674)- discloses an audio coder that decodes only specific subbands and ignores the others when a transmitting device operates at a degraded sampling rate.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (703) 305-8669 and email is James.Wozniak@uspto.gov. The examiner can normally be reached on Mondays-Fridays, 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talivaldis Ivars Smits can be reached at (703) 306-3011. The fax/phone number for the Technology Center 2600 where this application is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology center receptionist whose telephone number is (703) 306-0377.

James S. Wozniak  
5/28/04



DORIS H. TO  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600